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10/048,016	01/28/2002	Per Antonsson	003300-903	1277

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EXAMINER

SALIMI, ALI REZA

ART UNIT PAPER NUMBER

1648

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 10/048,016	Applicant(s) Antonsson et al
Examiner A. R. SALMI	Art Unit 1648

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE Three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Jul 7, 2003

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1 and 3-5 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1 and 3-5 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7, 9 6) Other:

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DETAILED ACTION

Response to Amendment

This is a response to the amendment B, paper No.8, filed 7/7/2003. Claims 2, 6-28 have been canceled. Claims 1, 3-5 are pending before the examiner.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 112, second paragraph, for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue that the meaning of the carrier is defined in the specification. In addition, applicants assert the recitation of “intentionally modified” is directed towards modification by substitution, but not deletions. Applicants refer the Office to specification (page 6, line 5), which recites “modified to remove type specific epitope(s) causing production of antibodies”. Applicants further assert, the limitations of “substance” should be understood by one skilled in the art to mean as one or more T cell epitopes. Regarding claim 3 applicants assert that the “peptide” is T cell epitope. Regarding claim 4 applicants assert that T cell epitope can belong to viral antigens or auto antigens or parasitic antigens. Regarding claim 5 applicants refer dictionary definition. Applicant’s argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not

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persuasive. At the onset applicants are reminded that although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). The claims should clearly and distinctly without any ambiguity claim the subject matter as the statute under 112 2nd paragraph demands. Presently, such is not the case, the claims are indefinite and confusing, the proper scope of the claimed invention cannot be appraised, especially in view of lack of proper disclosure. No one can infer the so called “substance” or “peptide” is T cell epitope, since nowhere in the claim says as much. Why can’t the substance be a dye, or cytokine, etc...? Moreover, no T cell epitope has been taught. Applicants assertions are unsupported. It appears even Applicants are confused in interpretation of their own claimed invention. Applicants are indicating the epitopes are not deleted they are substituted, and yet the specification’s page cited by the applicants reads as such that the specific epitopes are removed (emphasis added), removed by its common meaning has to do with deletion of something. If they are being removed what is put in their place, and if they are being deleted what is being deleted? The specification lacks teaching and the claims are indefinite and confusing. If the L1 is not disclosed and the “major” epitope are not disclosed, then one cannot know and be appraised of the full scope of the claimed invention. In addition, since the specification does not teach the intended regions the claims are vague and indefinite. The dictionary recitation does not provide adequate understanding of T cell epitopes “derived” from a group of “antigens...., or auto antigen”, the specification does not

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provide a standard for ascertaining the requisite degree of “antigens comprising tumor, bacterial, parasitic etc... The rejection is respectfully maintained.

Claim Rejections - 35 USC § 112

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 112, first paragraph, for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants hardly provides any argument for the issues raised by the Office, instead Applicants try to argue through a reference taught by Christenson et al (1994), which according to the Applicants discusses nutralizing epitopes present in HPV-L1. From the work of Christenson et al Applicants infer and concluded that the epitopes to be removed were clear to those skilled in the art at the time of invention, and one can fully enable their claimed invention. Applicants add, the epitopes to be fused to the protein are as stated in the specification, any nutralizing antibody-inducing peptide sequences from the group comprising tumor, bacterial, parasitic, etc.... Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. First, applicants understanding of Christenson et al (1994) is rather misplaced. The teaching of said article has to with expression of virus like particles (VLPs) via baculovirus expression vector and showing that the VLPs maintained their conformational epitope to be used as a possible vaccine to protect papillomavirus infection. They expressed a full length L1 of HPV-11 only. Here, applicants are supposedly removing epitopes, and in essence “gutting” any and all L1 protein, so the L1 can be utilized as a carrier of all types of heterologous antigen. Christenson et

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al were trying to show that VLPs expressed by baculovirus maintained their epitopes. Here, applicants are supposedly removing the epitopes. Applicants are trying to utilize a HPV “gutted” L1 capsid protein as a “carrier” for all types of antigens. In effect Applicants are forming a protein chaperone, albeit, the specification has not articulated as much. The teaching of the specification is far from providing adequate teaching for a general chaperon protein to carry any and all antigens from virus to parasite, or tumor into a cellular milieu. There is nothing in the specification either by way of reference, example, or any type of data that would show that the L1 of the claimed invention would not be digested, taking into account that the L1 and its “substance” would be subject to cellular enzymes. This is a very unpredictable field and absent adequate teaching one of ordinary skill in the art would be forced into undue experimentation. Second, It is rather interesting that if Office had cited Christenson et al (1994) as a possible art under 103(a) applicants would argue emphatically that there were no motivation or teaching of any sort for removing epitopes taught by Christenson et al (1994), and yet applicants are asking the Office to accept teaching that has nothing to do with the claimed invention as teaching well known in the art. Such is the case, the teaching of Christenson et al (1994) has no bearing on the claimed invention. Third, applicants are reminded that to obtain patent protection the disclosure should provide adequate teaching so one of ordinary skilled in the art would be able to practice the invention absent undue experimentation. However, presently such is not the case, The disclosure provides no examples, applicants are expecting others to enable their invention while they are obtaining patent protection, but this cannot be especially in an unpredictable field. Absent

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teaching by the applicant one ordinary skilled in the art would be required to conduct large quantity of undue experimentations to enable the claims, see *In re Vaeck*, 20 USPQ2d 1438 (CAFC 1991, at page 1445) wherein the board has indicated that “there must be sufficient disclosure, either through illustrative examples or terminology, to teach those of ordinary skill how to make and how to use the invention as broadly as it is claimed. This means that the disclosure must adequately guide the art worker to determine, without undue experimentation.” Applicants cannot rely on the knowledge of those skilled in the art to enable the claims without providing adequate teaching. Therefore, considering large quantity of experimentation needed, the unpredictability of the field, the state of the art, and breadth of the claims, it is concluded that undue experimentation would be required to enable the intended claim. Many of these factors have been summarized *In re Wands*, 858 F.2d 731, USPQ2d 1400 (Fed. Cir. 1988). The rejection is maintained.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a **written description** of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 112, first paragraph, for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue via a reference by Nieland et al 1999. Applicants assert that Nieland et al demonstrated that HPV VLPs can induce specific high titer neutralizing antibodies. From the work of Nielnad et al Applicants infer that

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those skilled in the art would know which epitopes to remove and the method by which to remove them. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. Once again the cited reference has nothing to do with the claimed invention. Nieland et al taught chimeric VLPs to elicit cellular response. They did not remove epitopes of any sorts and use the L1 protein as carrier protein for all types of foreign antigens. Applicants have mis-characterized their own invention. The claims are not directed to chimeric virus like particles (emphasis added). In addition, the rejection was under Written Description, and not enablement. There is a clear distinction between the two. The Office determined that applicants were not in possession of the "intentionally modified" L1 protein, since the structure of such a protein has not be disclosed. The specification does not set forth the metes and bounds of that encompasses modified peptides, or fusion peptides of any kind, or a "carrier", and there is not enough information about it in literature either to guide the one of ordinary skill in the art to predict the undisclosed regions where the region may encompass. The rejection is maintained for lack of possession.

Claim Rejections - 35 USC § 102

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bloch et al (WO 97/46693) for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue the presently claimed invention is directed to the use of a single carrier protein, and not a capsid. Applicants admit that Bloch et al disclose only the possibility of partially deleted

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use of L1 protein and not with the replacement of epitopes through mutagenesis. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. Applicants are reminded to review their claimed invention. First, L1 protein of papillomavirus forms a capsid like particles. The claims are directed to a PRODUCT, and not a method of use, so applicants assertion is misplaced when they indicate "the invention is directed to the use", the "use" means method. Moreover, if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. Hence, the disclosure of the above cited patent anticipates the claimed invention. The rejection is maintained.

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Gissmann et al (WO 96/11272), for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue that Gissmann et al merely disclose proteins in which linear peptide sequence has been deleted. Applicants assert the present invention has been altered to remove conformational epitopes. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. There is no evidence for applicants assertion that the deleted region as taught by Gissmann et al would not encompass "naturalizing epitope", whether or not a linear or non-linear region has been deleted has no bearing of the claims. The claims are directed to a product, and the prior art teaches the same product. Moreover, if the prior

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art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. The rejection is maintained.

Claim Rejections - 35 USC § 102

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(a) as being anticipated by Burger et al (WO 99/48518), for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue that the fusion protein of the cited reference contains papillomavirus specific epitopes. In contrast the exclusion of papillomavirus specific epitope is essential to the presently claimed invention. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. The claims are directed to a product, and the prior art teaches the same product. There is nothing in the claimed invention that indicates which antigens are being placed. One scenario may very well end up being the product taught by the above cited art. The claims are given their broadest possible interpretation, and have been examined in view of the specification and there is nothing in the specification as to the exact construct or anything of sorts to guide the Office to determine what is and what isn't within the scope of claimed product. Therefore, there is nothing in the specification which excludes the

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teaching of Burger et al. Moreover, if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. The rejection is maintained.

Claim 1 is rejected under 35 U.S.C. 102(a) as being anticipated by Gissmann et al (U.S. Patent No. 6,066,324), for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue that Gissmann et al specifically directed to amino acid deletions, and not substitutions. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. The claim of Gissmann et al is directed to "intentionally modified", there is nothing in the claim that indicates "substitution", applicants assertions are not supported. Moreover, if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. The rejection is maintained.

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Claim Rejections - 35 USC § 102

Claims 1, 3, 4, 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Bloch et al (U.S. Patent No. 6,420,160 B1) for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue Bloch et al are concerned only with HPV-L1 capsid containing nucleic acid and not protein. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has been considered fully, but they are not persuasive. Applicants are reminded to review their claimed invention. First, L1 protein of papillomavirus forms a capsid like particles. Second the limitations of "substance" does not exclude nucleic acid. In addition, the nucleic acid upon translation at cellular level would be the same protein as what applicants are claiming. In addition, the claims are directed to a PRODUCT, and not a method of use. Moreover, if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. Hence, the disclosure of the above cited patent anticipates the claimed invention. The rejection is maintained.

Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Gissmann et al (U.S. Patent No. 6,361,778 B1), for reasons of record advanced in the previous Office Action mailed 7/7/2003. Applicants argue that Gissmann et al specifically directed to amino acid deletions, and not substitutions. Applicant's argument as part of amendment B, Paper NO. 8, filed 7/7/2003 has

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been considered fully, but they are not persuasive. The claim of Gissmann et al is directed to “intentionally modified”, there is nothing in the claim that indicates “substitution”, applicants assertions are not supported. Moreover, if the prior art structure is capable of performing the intended use, then it meets the claim. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, Applicants are reminded that the Patent Office does not have facilities to perform physical comparisons between the claimed product and similar prior art products. The rejection is maintained.

Note: Applicants directing the Office to MPEP 706.02 is noted. Applicants assert the examiner is instructed to choose either section (a), (b), or (e) under which to site a given reference.

It is elementary patent prosecution that all pertinent art must be cited in view of the compact prosecution standard. The Office is under obligation to form as complete a record as possible, and if a rejection is applicable it will be sited. Each rejection carries different weight. In addition, as Applicants are well aware, the Office is obligated to protect the interest of the Public as well as the inventors. Therefore, Applicants assertion to MPEP 706.02 finds no bases on either facts, law, or policy.

No claims are allowed.

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Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. R. Salimi whose telephone number is (703) 305-7136. The examiner can normally be reached on Monday-Friday from 9:00 Am to 6:00 Pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel, can be reached on (703) 308-4027. The fax phone number for this Group is (703) 305-3014, or (703) 308-4242.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0196.

A. R. Salimi

4/18/2003


ALI R. SALIMI
PRIMARY EXAMINER